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USES FOR ULTRASONIC WAVES IN POLAND

Dziennik Zachodni
Stalinogrod, 10 Dec 1953

Problems related to the application of ultrasonic waves in industry and other fields were the theme of the scientific conference recently held in Warsaw by the Institute of Basic Technical Problems (Instytut Podstawowych Problemow Techniki) of the PAN (Polska Akademia Nauk, Polish Academy of Sciences). Scientists and specialists in the field of metallurgy, chemistry, medicine, biology, geology, radiotechnology, etc., participated in the conference.

The participants discussed in detail Polish attainments in the field of applied ultrasonic technology and, among other things, research on the use of ultrasonic waves in determining the accuracy of machines and in uncovering defective machine parts and aggregates, such as turbine shafts, boilers, etc.

The Electroacoustic Research Laboratory (Zaklad Elektroakustyki) of the Warsaw Polytechnic (Politechnika Warszawska) and the Institute of Metallurgy (Instytut Metalurgiczny) in Gliwice have made a number of original Polish defectoscopes, or instruments for detecting defects. These are as good as the best foreign-made apparatus of this type. At present work is going ahead on series production of defectoscopes. Such instruments would help foundries, shipyards, and other industrial machine plants to produce better quality goods.

It is anticipated that in the very near future defectoscopes will be used to detect more quickly defective parts in streetcars and locomotives. For example, this will cut down traffic stoppages caused by a cracked axle. Ultrasonic waves in the future will be applied in detecting voids and underground streams in salt mines. This will result in safer working conditions for the miners.

Poland also has produced a number of sonic depth finders. These have been fully tested during deep-sea voyages. They help fishermen find fish, determine where to throw nets, and ensure greater safety in navigation. The Gdansk Polytechnic (Politechnika Gdanska) is working on further improvement of these instruments.

Positive results have been obtained with ultrasonic wave instruments in the field of medicine. Particularly good results have been obtained in treating rheumatological ailments and some neurological ailments.

During the conference a number of other fields in the national economy were mentioned in which, on basis of experiments presently being conducted, the application of the ultrasonic technology could be of considerable usefulness. Among other things, it was asserted that ultrasonic waves can be used to accelerate leather tanning processes. Ultrasonic treatment accelerates chemical reaction and causes tanning solutions to permeate leather faster. During laboratory tests the tanning process was completed by this method in 8 hours, whereas it usually takes about one month.

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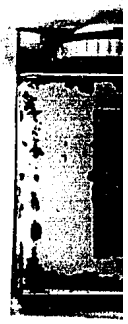

Laboratory tests show that sterilization of liquids by the use of ultrasonic waves can result in considerable benefit. Milk pasteurized by this method retains vitamins and other nourishing ingredients. The use of ultrasonic waves in the production of edible fats would improve their quality and durability.

Metallurgists pointed out enormous gains in the application of ultrasonic waves in the recovery of precious metals from the dust in gases escaping from metallurgical furnaces.

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